ZENTRALE VERTRAGSKUNDENDIENSTE + ERSATZTEILE-LAGER
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SERVICE

YOKO

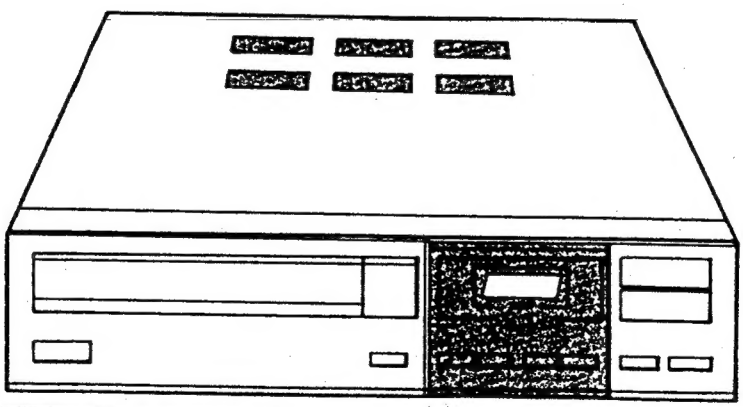
M O D E L L - F 92

ACHTUNG!!!!!!!!!!

****

Für dieses Modell F -92 existieren 3 verschiedene Chasssiseinheiten. Dieses Manual zeigt nur eine Version. Die beiden anderen sind uns zur Zeit nicht vorrätig. Versand erfolgt sobald die Manuals bei uns eintreffen.

ZVKD Hemmersbach



COMPACT DISC PLAYER

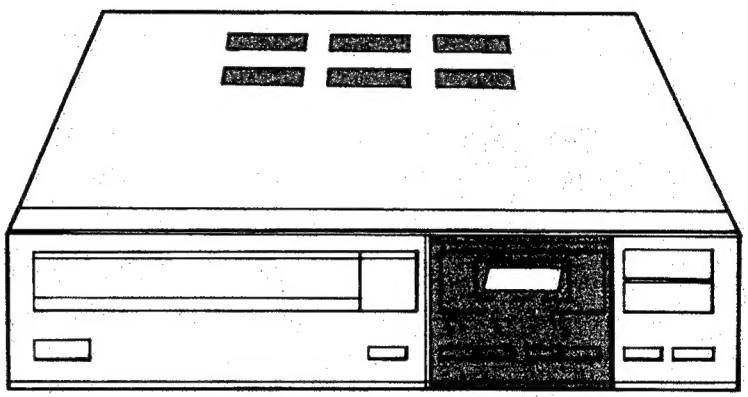
MANUAL

COMPACT disc DIGITAL AUDIO

SERVICE MANUAL

COMPACT DISC DIGITAL AUDIO PLAYER

COMPACT disc DIGITAL AUDIO



WARNING

FOR CONTINUED SAFETY THE FOLLOWING PRECAUTIONS TO BE FOLLOWED DURING SERVICING

1. MAKE SURE POWER CORD IS DISCONNECTED BEFORE REPLACING ANY PARTS.
2. REPLACE WITH SAME TYPE, CRITICAL PARTS WITH ⚠ MARK ON THIS DIAGRAM.
3. THE FOLLOWING TEST MUST BE IMPLEMENTED AFTER EACH REPAIR BEFORE RETURNING IT TO CUSTOMER.
   USE AN OHM-METER TO MEASURE THE D.C. RESISTANCE FROM BOTH A.C. CONDUCTORS TO ANY EXPOSED METALLIC PARTS SUCH AS A SCREW HEAD, METAL INLAYS FTC, THE RESISTANCE MEASURED TO BE 10 MEGAOHMS MINIMUM.

CONTENTS

SPECIFICATIONS

AUDIO SPECIFICATIONS

Number of channels	2
Signal/Noise Ratio	95dB
Harmonic Distortion	0.03% (at 1 KHz)
Frequency Response	5-20000Hz (±1dB)
Channel Separation	85dB
Wow/Flutter	Not measurable
Output Voltage	2.0V (TYP)

SIGNAL FORMAT

Sampling Frequency	44.1 KHz
Error Correction System	CIRC double error correction system
D/A Conversion	16 bit linear

GENERAL SPECIFICATION

Power Requirements	100/120/220/240V 50/60Hz
Power Consumption	10W
Dimensions (W×H×D)	320×73×282mm
Weight	2.9 Kg

PERFORMANCE SPECIFICATIONS

	NOMINAL	LIMIT
Output Level	2.0V±0.2V	2.0V±0.4V
Channel Unbalance	±0.2 dB	±1dB
Frequency Response		
20Hz	±0.5dB	±1dB
10KHz	±1dB	±1.5dB
20KHz	±1dB	±2dB
Signal to Noise Ratio	95dB	90dB
Channel Separation		
1KHz	85dB	80dB
10KHz	85dB	70dB
Total Harmonic Distortion		
1KHz	0.03%	0.1%
10KHz	0.1%	0.3%
20KHz	3%	5%
Dynamic Range	90dB	80dB

PICK UP

Type	Astigma 3 beam
Light Source	Semiconductor laser
Wave Length	780nm

ACCESSORIES ..... Phone Cord

• • •***NOTE:***

Nominal Specs represent the design specs; all units should be able to approximates these . . . some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit perform to less than within any limit spec.

DISASSEMBLY

1. To Remove the upper cover (Figure 1), Remove 3 screws ①

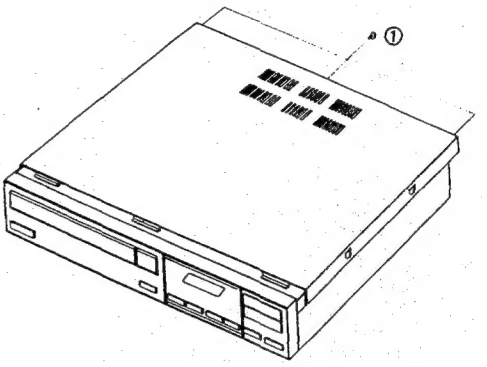


Figure 1

2. To Remove the Front Panel (Figure 2). After taking off the upper cover, Remove 6 screws ②

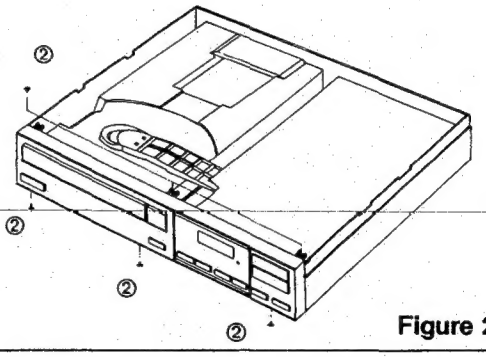


Figure 2

3. To Remove the TRAY Mechanism Ass'y (Figure 3) After taking off the front panel, rotate the pulley (A) right and extract tray to (A) direction till reach to tray stopper (b), and extract the tray to (A) direction after pushing the tray stopper.

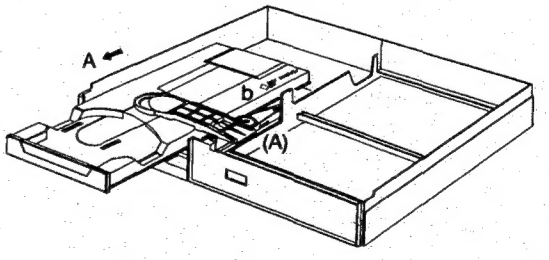
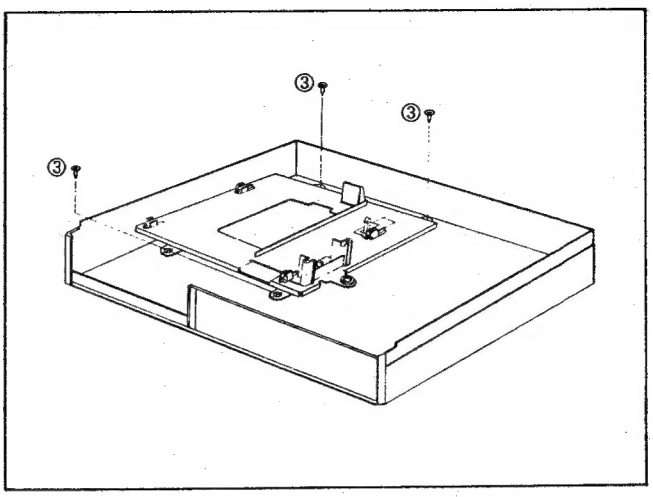


Figure 3

4. To Remove the Mechanism, After taking off the Tray, Remove 4 screws ③



5. To Remove the P.C. Board (Figure 5)
   A: After taking off the Front Panel (refer to 2) Remove 6 screws ④
   B: After taking off the upper cover (refer to 1) Remove 6 screws ⑤,

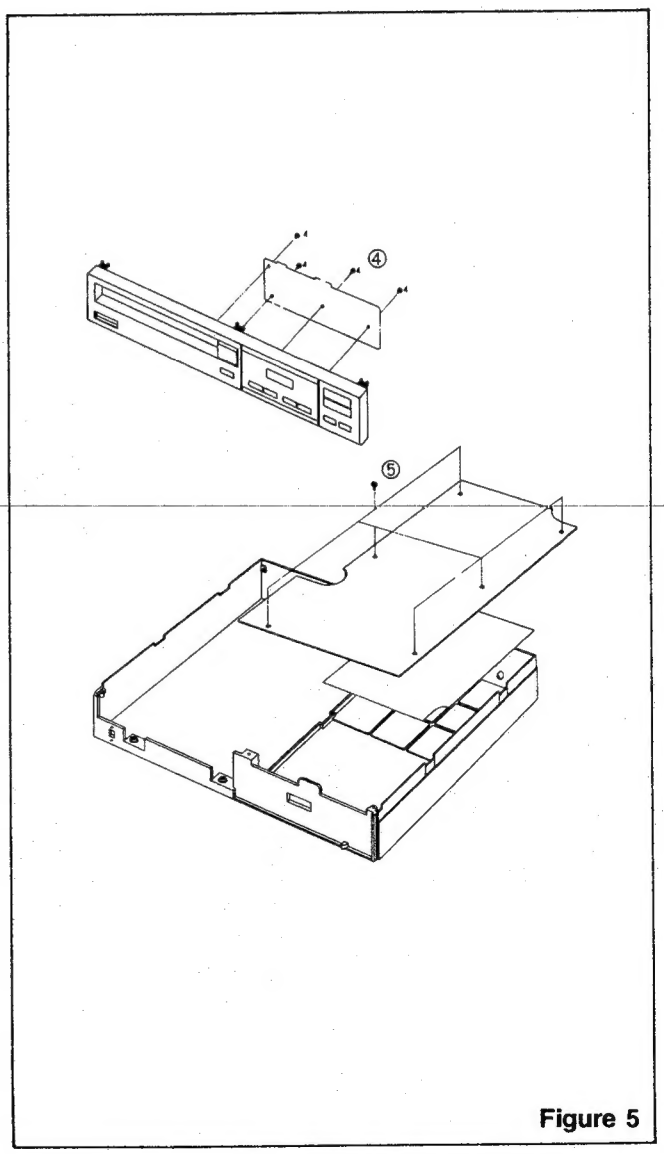


Figure 5

6. To Remove the Power Transformer (Figure 6)
   After taking off the Mechanism (refer to 4), remove 2 screws ⑦

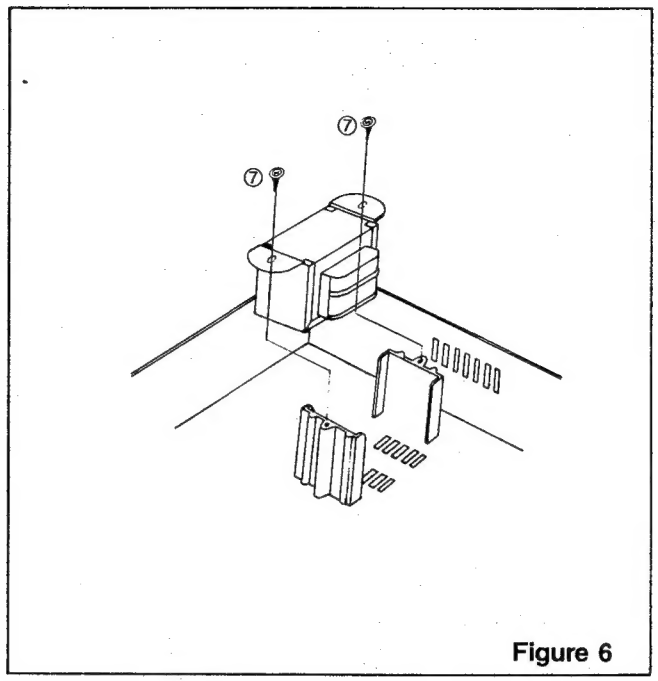


Figure 6

7. To Remove the pick up (Figure 7). After taking off the Mechanism (refer to 4)
   A: To remove the guide shaft, remove the 4 screws ⑧
   B: To Remove the rack remove the 1 screws ⑨

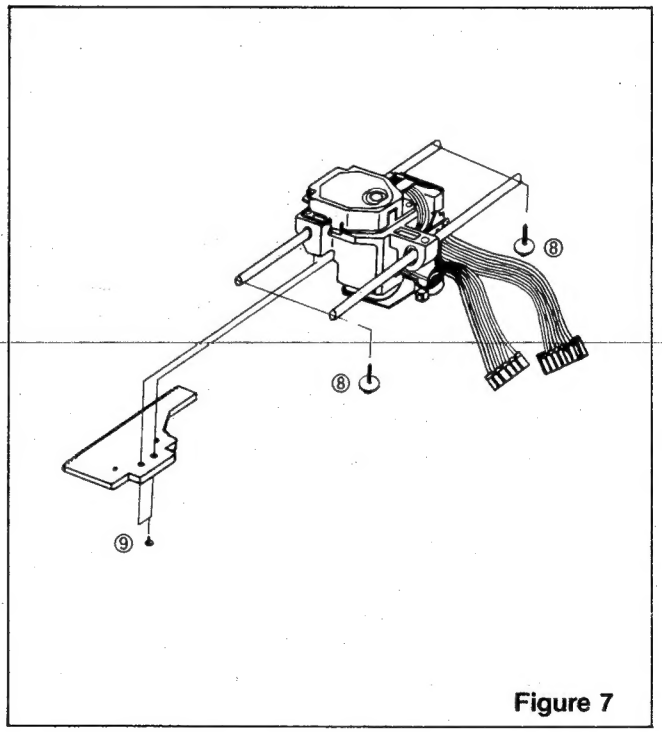
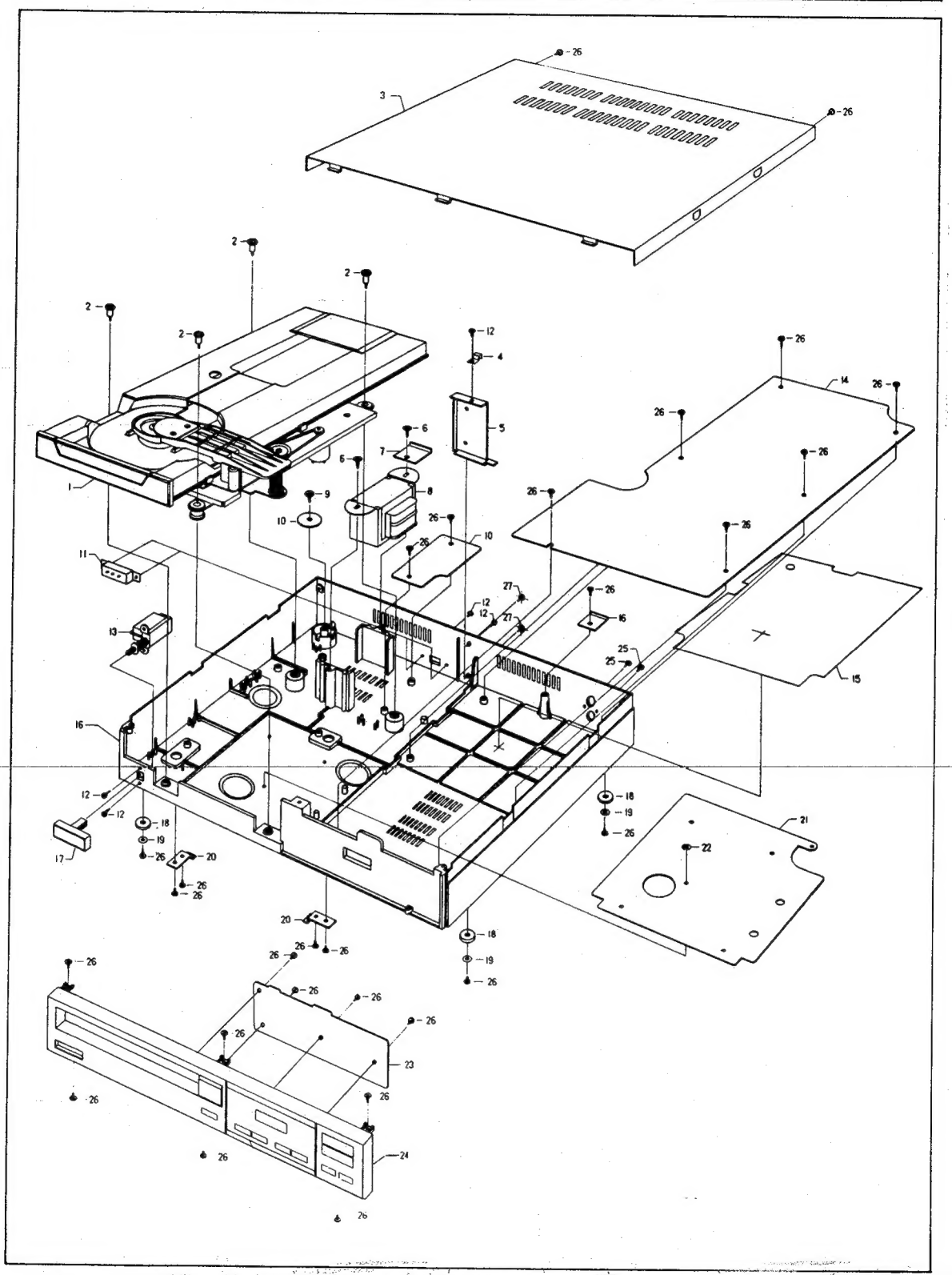
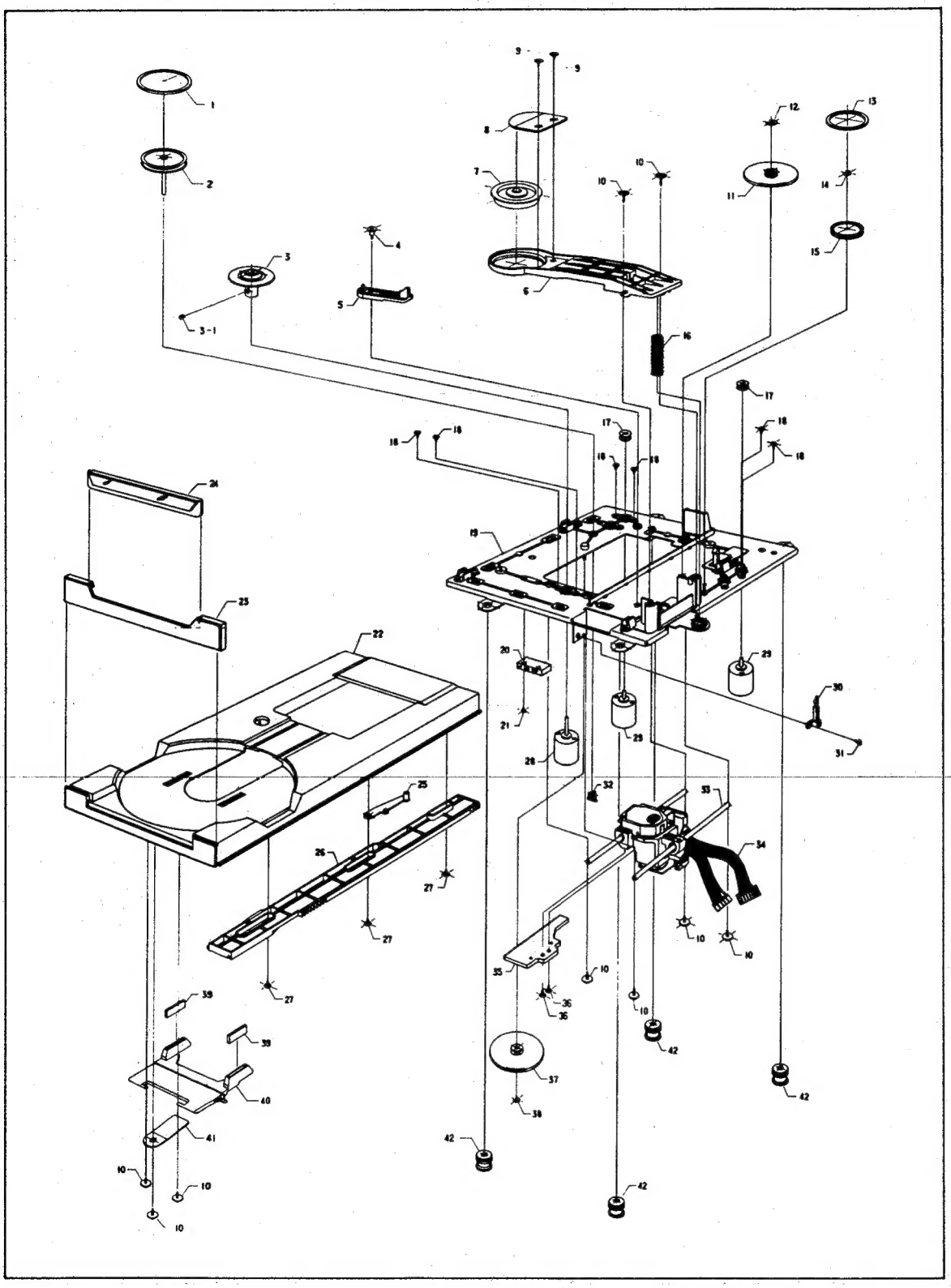


Figure 7

EXPLODED VIEW—CABINET



EXPLODED VIEW—MECHANISM



EXPLODED VIEW PARTS LIST

CABINET

REF NO	DESCRIPTION	DRW NO.
1	MECH A. ASS'Y	M 1024
2	SETTING SCREW ϕ3 x 13, MECHA x 4	
3	UPPER-COVER	H 22003
4	EARTH-PLATE "B"	H 22028
5	EARTH-PLATE	H 22027
6	SCREW-TAPPING WPH ϕ3.5 x 10L TRANSFORMER x 2	
7	BRACKET "B"	SF 1047
8	TRANS FORMER	
9	SCREW-TAPPING WPH ϕ3 x 8L UPPER-COVER x 2 STOPPER POWER CORD x 2	
10	PCB-FUSE	CD 4198
11	VOLTAGE S/W	
12	SCREW-MACHINE PHM 3 x 6 POWER S/W x 2 VOLTAGE S/W x 2 EARTH-PLATE x 3	
13	POWER S/W	
14	PCB-MAIN	CD 3028
15	FOIL-PLATE "B"	H 22019
16	FRAME	CD 1014
17	BUTTON-POWER	H 22008
18	RUBBER-FOOT x 4	SF 1024
19	WASHER x 4	SF 1040
20	BRACKET-MECHA x 2	SF 1012
21	BOTTOM-EARTH	H 22030
22	C,S-WASHER ϕ2 x ϕ6	HT 7105
23	PCB-PANEL	H 22015
24	FRONT-PANEL	H 22002
25	SCREW-TAPPING PH ϕ3 x 10L RCA-JACK x 2	
26	SCREW-TAPPING PH ϕ3 x 8L	
	FRONT-PANEL x 6 PCB-PANEL x 7 BRACKET-MECHA x 4 FUBBER-FOOT x 4 PCB-MAIN x 6	

MECHANISM PART LIST

REF NO	DESCRIPTION	DRW NO
1	BELT "B"	M 1029
2	PULLEY 1st (TRACK SERVO)	M 1003
3	TURN TABLE	M 1013
3-1	SETTING BOLT	AT 0204
4	SLIDER SCREW	M 1022
5	SLIDER	M 1011
6	FLAPPER	M 1015
7	DISC CLAMPER	M 1014
8	CLAMPING PLATE	M 1012
9	SCREW-TAP (BH) T3 x 7L	
10	SCREW-TAP (WPH) T3 x 8L	
11	WHEEL-2nd (TRAY SERVO)	M 1008
12	E-RING ϕ2.0	
13	BELT "A"	M 1025
14	E-RING ϕ1.5	
15	WHEEL-1st (TRAY SERVO)	M 1007
16	SPRING-FLAPPER	M 1032
17	PULLEY-MOTOR	M 1002
18	SCREW-BH M x 4.5L	
19	BASE ASS'Y	M 1001
20	MICRO SWITCH (AH 2502)	SANKYO
21	SCREW-TAP (PH) T2.2 x 12L	
22	TRAY	M1017
23	COVER-TRAY	H 22004
24	SCREW-PH M3 x 6	
25	LEVER-CLUTCH	M 1010
26	ACTUATING RACK	M 1009
27	SCREW-TAP (BH) T2.2 x 6L	
28	MOTOR-SERVO (NBS6B-K)	SANKYO
29	MOTOR-SPINDLE (NBS4R-K)	SANKYO
30	LEAF SWITCH (MSW 1585)	MIC ELEC
31	SCREW-PH M2.6 x 0.45 x 6L	
32	WHEEL-2nd	M 1006
33	GUIDE SHAFT	M 1030
34	PICK UP (KSS-152A)	SONY
35	RACK (TRACK)	CD 4200
36	SCREW-TAPPING PH ϕ2 x 6L	
37	WHEEL-3rd (TRACK SERVO)	M 1004
38	E-RING ϕ2.0	
39	PROTECTOR DISC	M 1018
40	DISC LIFTER	M 1016
41	SPRING PLATE	M 1020
42	INSULATOR	M 1021

ALIGNMENT AND ADJUSTMENT

When you happen to do either (1), or (2) be sure to perform the adjustments 1-6.

1) Disassembly of the unit mechanism and replacement of parts.
2) Replacement of parts of the pick up assembly.

••PRESETTING

Adjustment	Circuit No.	Preset Position
RF GAIN	VR 101	Center
FE OFFSET	VR 202	Center
TE OFFSET	VR 201	Center
FE GAIN	VR 204	Center
TE GAIN	VR 203	Center
PLL	VR 301	Center

••Adjustment should be made in the following sequence.

1. RF GAIN Adjustment.

Don't perform this adjustment except when the parts of R101, R201, C101, C102, C201, PICK UP, IC1 have been changed.

1) Instrument to be used
   •Oscilloscope

2) Adjusting procedure (Figure 1)
   •Connect the oscilloscope to TP1 (RF) and TP4 (GND)
   •Load a disc in the player and set the player to play mode.
   •Adjust VR101 so that oscilloscope indicate the figure shown in Figure 1.

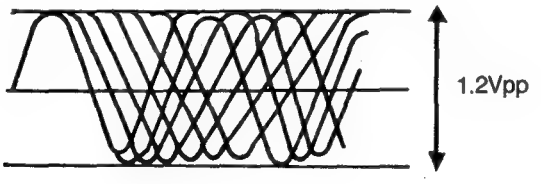


Figure 1

2. FE OFFSET Adjustment.

Don't perform this adjustment except when the parts of VR202, IC1, PICK UP have changed.

1) Instrument to be used.
   - •Oscilloscope

2) Adjusting Procedure (Figure 2)
   - •Connect the Oscilloscope to TP2 (FE) and TP4 (GND).
   - •Load a disc in the player, and set the player to STOP mode.
   - •Adjust VR202 so that oscilloscope indicate the figure shown in Figure 2.

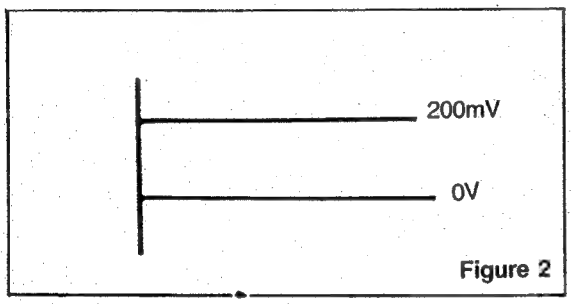


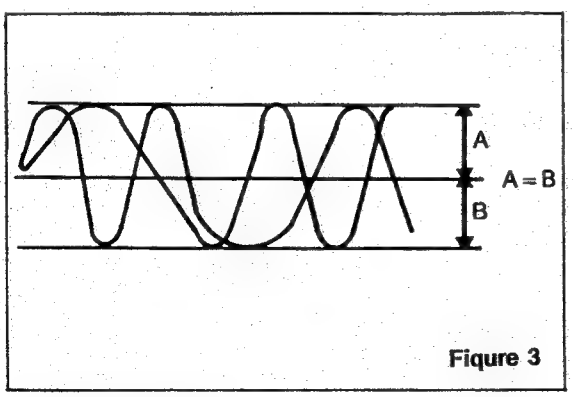
Figure 2

3. TE OFFSET Adjustment.

Don't perform this adjustment except when the parts of VR201, IC1, PICK UP.

1) Instrument to be used.
   - •Oscilloscope

2) Adjusting Procedure.
   - •Connect the oscilloscope to TP3 (TE) and TP4 (GND).
   - •Return to Counterclockwise VR203.
   - •Load a disc in the player, and set the player to play mode.
   - •Adjust VR201 so that oscilloscope indicate the figure shown in Figure 3.



Fiqure 3

•presetting to VR203, after adjusted.

4. FE GAIN Adjustment.

Don't perform this adjustment except when the parts of VR204, IC1, PICK UP have been changed.

1) Instrument to be used.
   - •Oscilloscope

2) Adjusting Procedure
   - •Connect the oscilloscope to TP2 (FE) and TP4 (GND).
   - •Load a disc in the player, and set the player to play mode.
   - •Adjust VR204 so that oscilloscope indicate the figure shown in Figure 4.

5. TE GAIN Adjustment.

Don't perform this adjustment except when the pats of VR203, IC1, PICK UP have been change.

1) Instrument to be used.
   - •Oscilloscope

2) Adjusting Procedure
   - •Connect the oscilloscope to TP3 (TE) and TP4 (GND).
   - •Load a disc in the player, and set the player to play mode.
   - •Adjust VR203 so that oscilloscope indicate the figure shown in Figure 5.

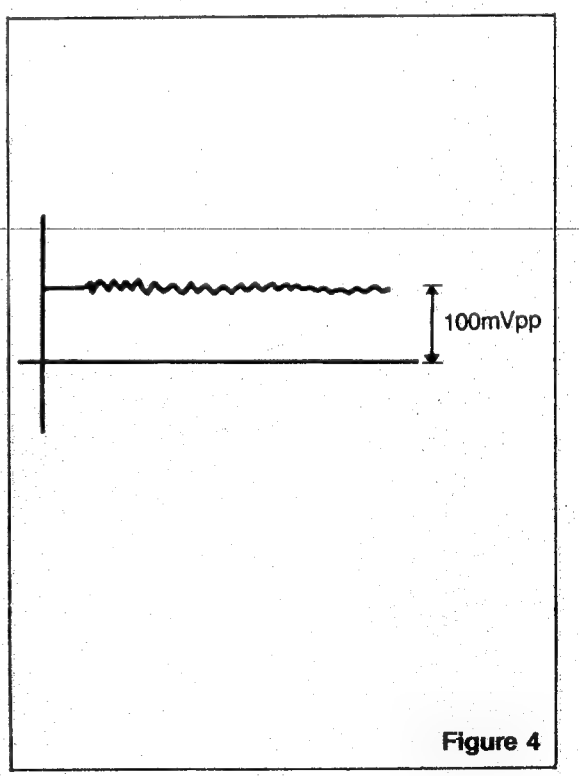
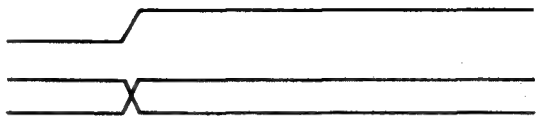
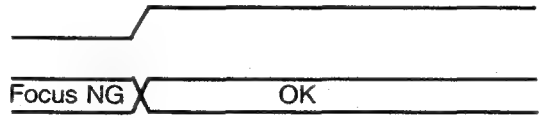
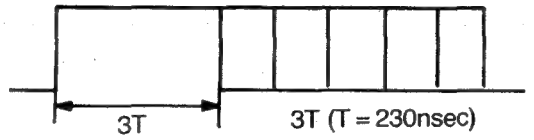
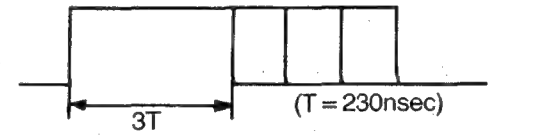
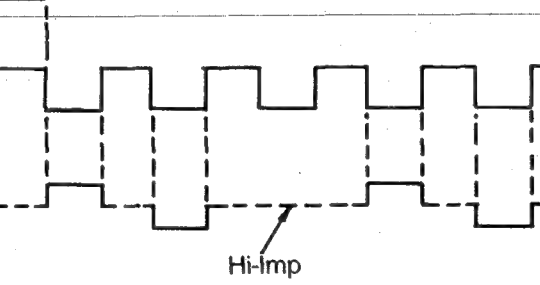


Figure 4

DESCRIPTION OF INTERFACE

Signal	Timing and level	Contents
OPEN SW CLOSE SW SLED SW		TRAY OPEN TRAY CLOSE Inner SLED
FOK		FOK sign
EFM		EFM comparator signal
ASY		EFM buffe sign
EFM		EFM : EFM signal
PLCK PDO		PLCK: PLL clock about 4.3 MHz PDO: PLL servo phase differentiation detction output

6. Adjustment PLL.

Only perform this adjustment when IC2, IC3, VR301, C316, R316 are replaced.

1) Instrument to be used.
   - •Oscilloscope

2) Adjusting Procedure
   - •Connect the oscilloscope to TP5 (GFS) and TP4 (GND)
   - •Load a disc in the player, and set the player to play mode.
   - •Adjust VR301 so that oscilloscope indicate the figure shown in Figure 6.

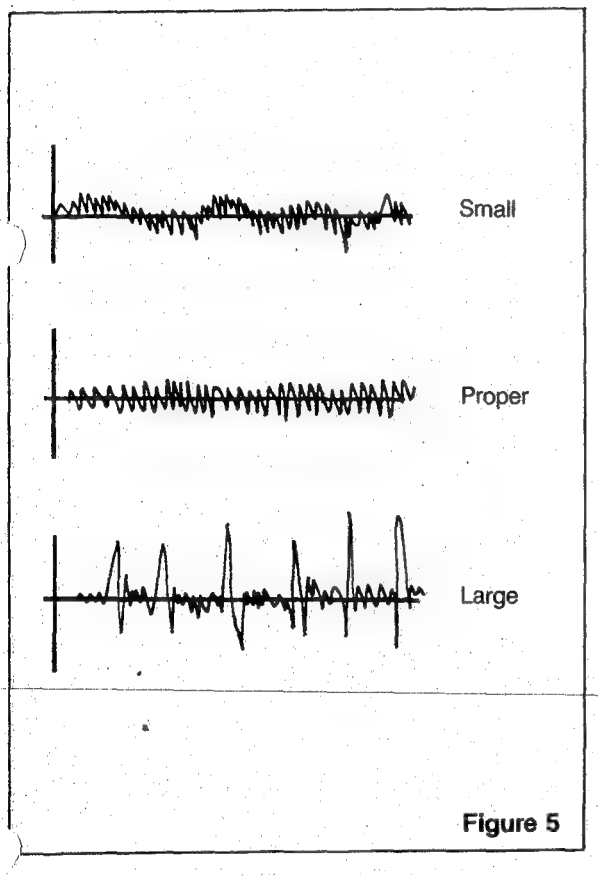


Figure 5

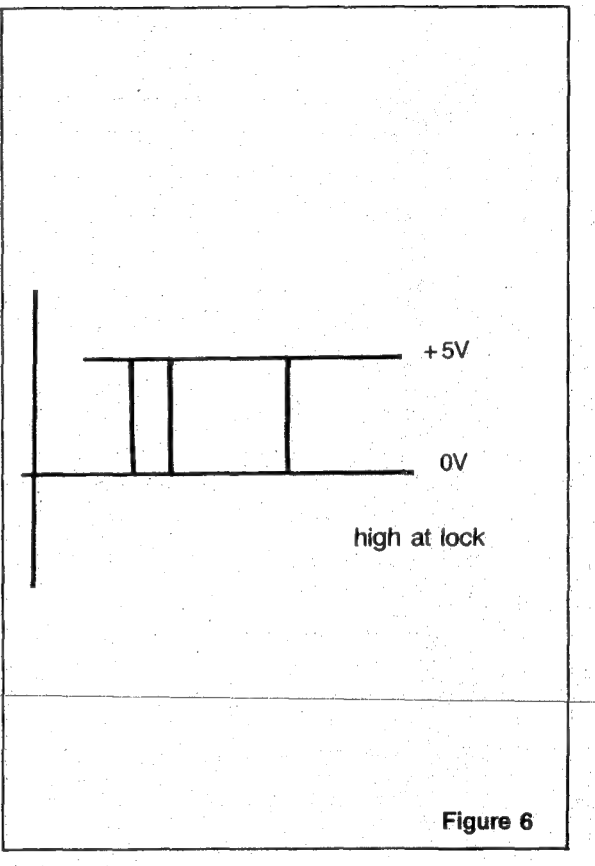
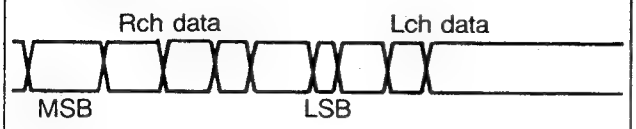
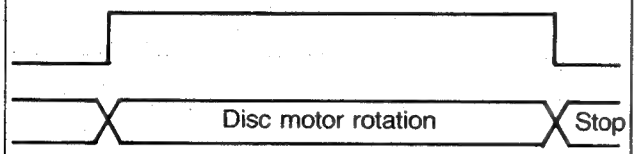
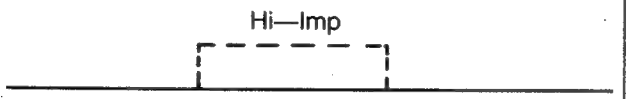
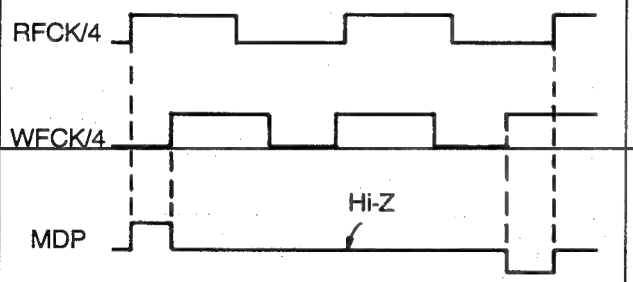
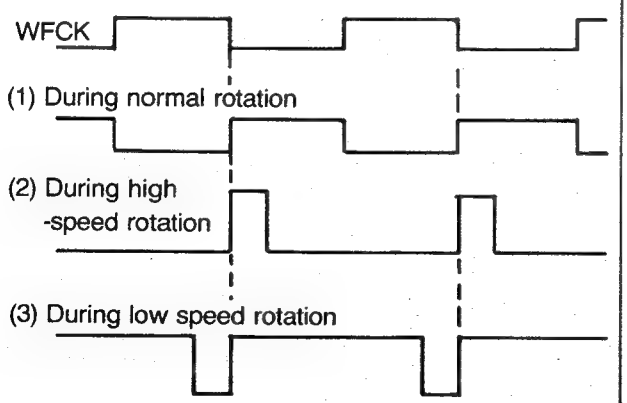
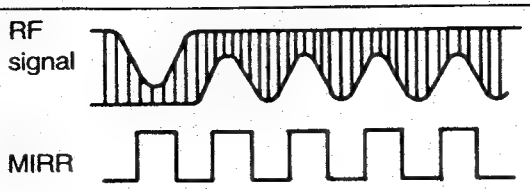
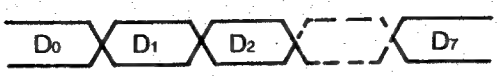
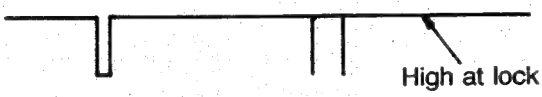
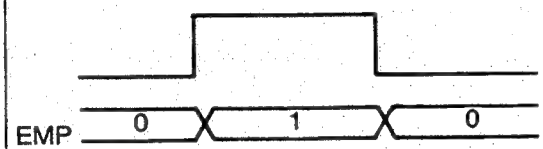
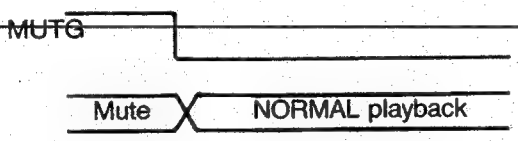
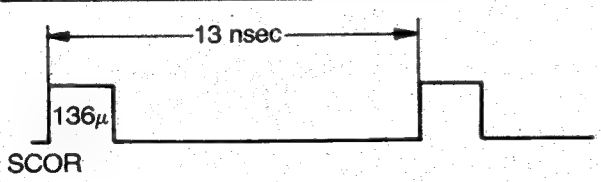
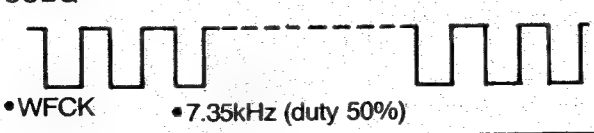


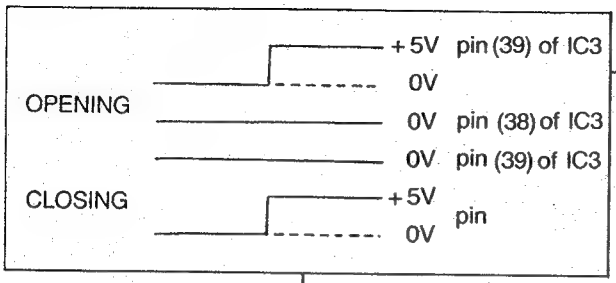
Figure 6

Signal	Timing and level	Contents
LRCK		LRCK: L, R select signal
WDCK		WDCK: Clock for timing generation
DA01 | DA16		DATA: 16 bit Parallel audio output (2'S complement) C210: Clock for timing generation
MON		MON: MOTOR ON
FSW		FSW: FREQUENCY SW for Disc Motor servo
MDP		MDP: Rough control in CLV-S mode and phase control signal in CLV-P mode
MDS		MDS: Speed control signal in CLV-P mode

Signal	Timing and level	Contents
MIRR		Mirror output
DATA		Data transmission
CLK		Data transmission clock
XLT		Data transmission latch
DIRC		Servo control signal used in 1-track JUMP (Refer to servo command code lists)
GFS		GFS: When the data is correctly read with the disc motor rotating normally, becomes high in lock mode.
EMP		Audio emphasis control signal
MUTG		Mute correct signal for audio signal of signal processing LSI
SCOR		SCOR: Sub-code synchro signal
SUBQ		SUBQ: Sub-code Qch signal
WFCK		WFCK: Write Frame clock in signal processing LSI

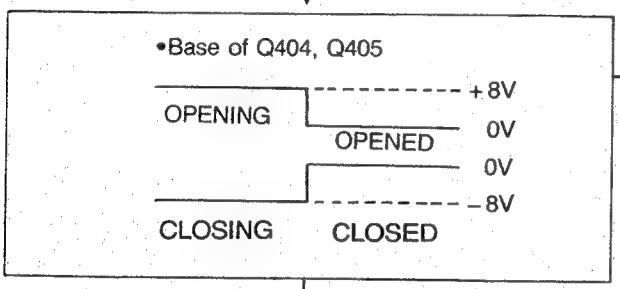
TROUBLE SHOOTING

(1) **Does the TRAY Operated?**



NO → Defective OPEN/CLOSE switch and IC3

YES ↓

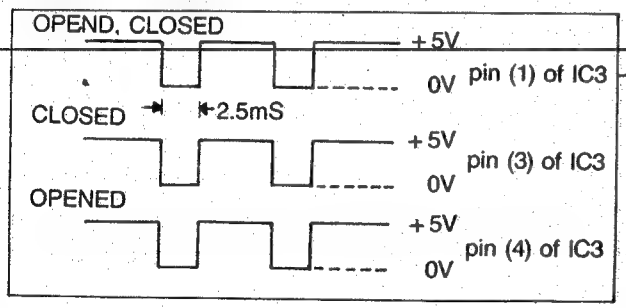


NO → Defective Q404, Q405 IC12

YES ↓

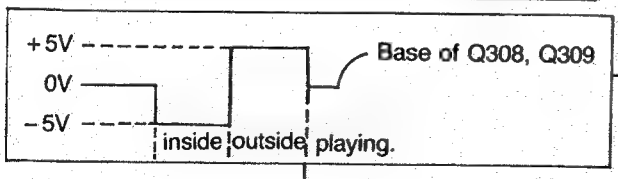
Defective TRAY MOTOR and CN8

•Defective OPEN/CLOSE SWITCH



NO → Defective D401, D402 D403, and CN6.

(2) **Does the PICK UP return to inside when closed?**

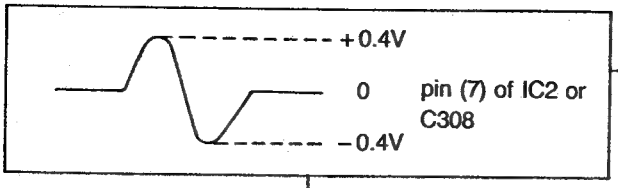


NO → Defective pin (14), (15) of IC2 and SLED switch

YES ↓

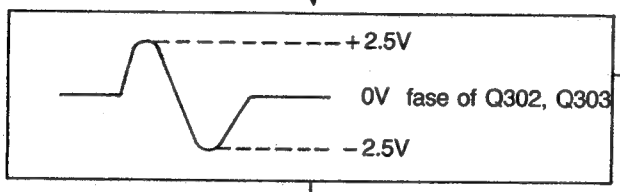
Defective motor and CN8, JW1, JW2.

(3) **Does focus work?**



NO → Defective pin (7) and (1) of IC2 or C308

YES ↓

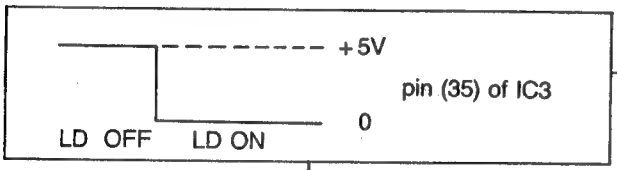


NO → Defective pin (5), (6) IC2, or Q302, Q303

YES ↓

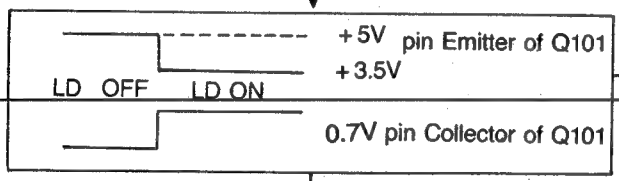
Defective CN2, PICK-UP

(4) **Is laser diode lighted?**



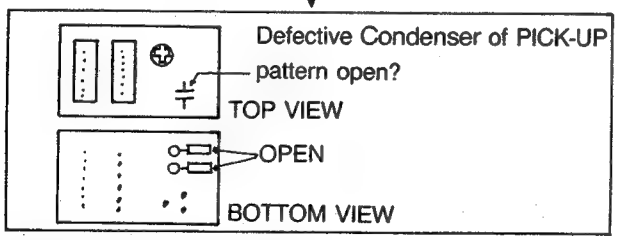
NO → Defective OPEN/CLOSE and SLED switch.

YES ↓

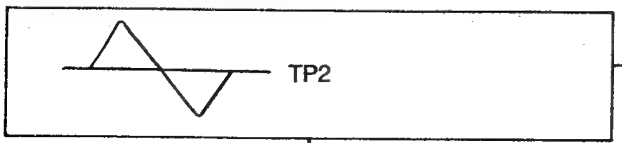


NO → Defective pin (5), (6) of IC1 periphery Q101.

YES ↓

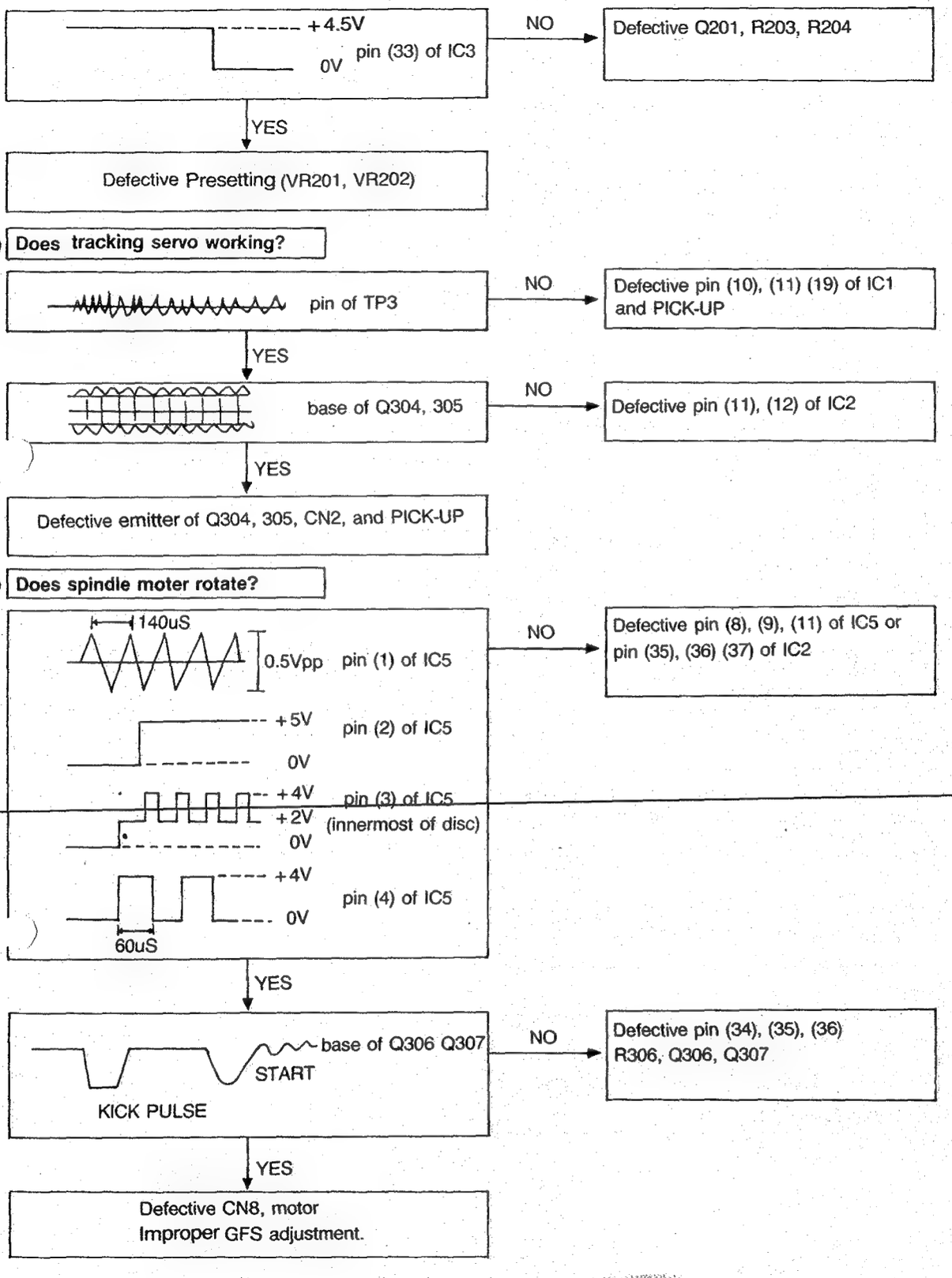


(5) **Output Focus error (FE)?**

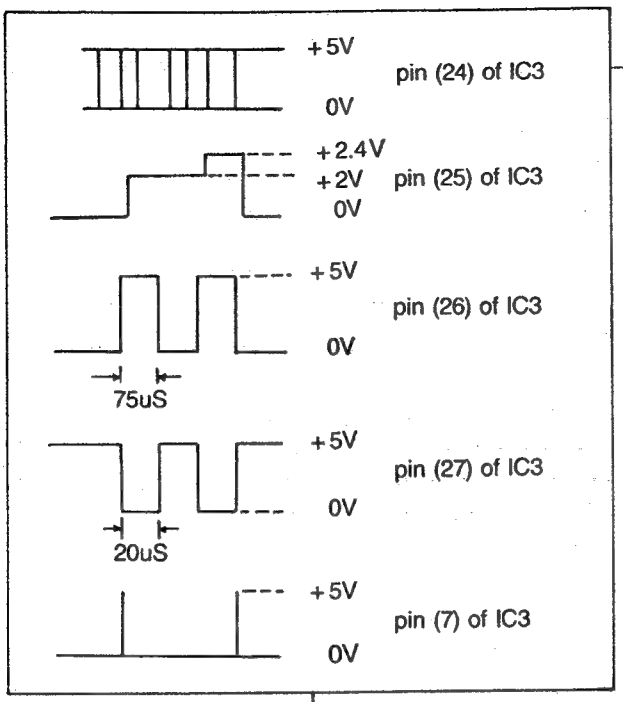


NO → Defective CN1 or pin (7), (8) of IC1

YES ↓


+4.5V
0V
pin (33) of IC3
NO
Defective Q201, R203, R204
YES
Defective Presetting (VR201, VR202)
(6) Does tracking servo working?
pin of TP3
NO
Defective pin (10), (11) (19) of IC1 and PICK-UP
YES
base of Q304, 305
NO
Defective pin (11), (12) of IC2
YES
Defective emitter of Q304, 305, CN2, and PICK-UP
(7) Does spindle moter rotate?
140uS
0.5Vpp
pin (1) of IC5
NO
Defective pin (8), (9), (11) of IC5 or pin (35), (36) (37) of IC2
+5V
0V
pin (2) of IC5
+4V
+2V
0V
pin (3) of IC5
(innermost of disc)
+4V
0V
pin (4) of IC5
60uS
YES
base of Q306 Q307
START
KICK PULSE
NO
Defective pin (34), (35), (36) R306, Q306, Q307
YES
Defective CN8, motor
Improper GFS adjustment.

(8) **Does the LEAD IN? (total track display)**



NO → Defective pin (24), (25), (26), (27) of IC3, pin (23),)24), (25) of IC5

Defective R413, R414, R415, R416, 7404, 7405. Q402, Q403

YES ↓

Defecfive C317, C318, C319, R311, R312, R313 R319, R320, Q301 • Improper PLL adjustment •

→ Defective pin (60), (61), (80) of IC5

(9) **Output audio?**

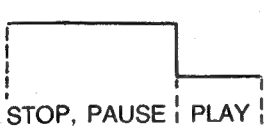
pin (9), (10), (11), of IC15 applied 88.2kHz

NO → Defective IC15, MUTE circuit.

YES ↓

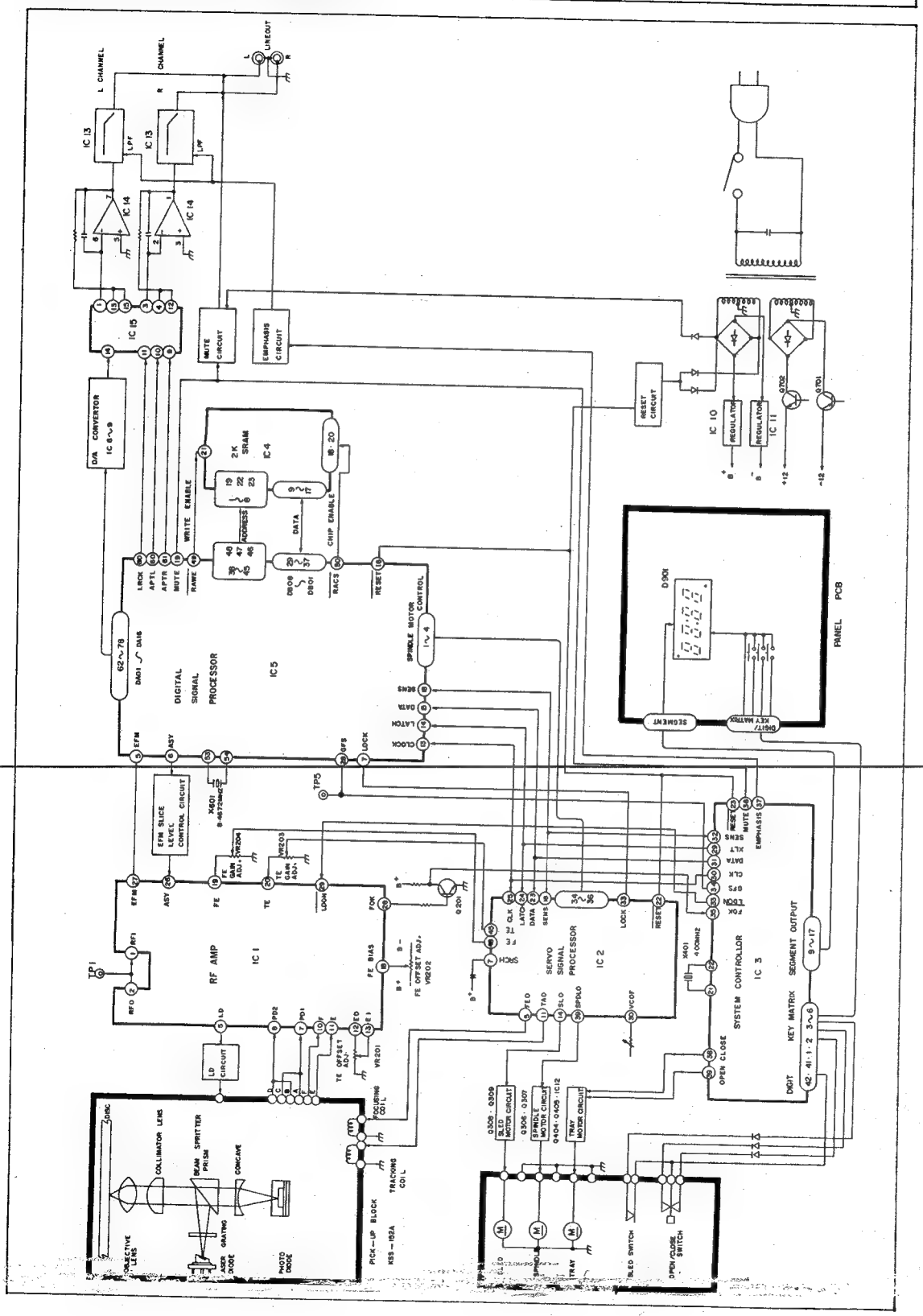
pin (1), (7) of IC14 applied signal

•MUTE



pin (36) of IC3 and pin (19) of IC5

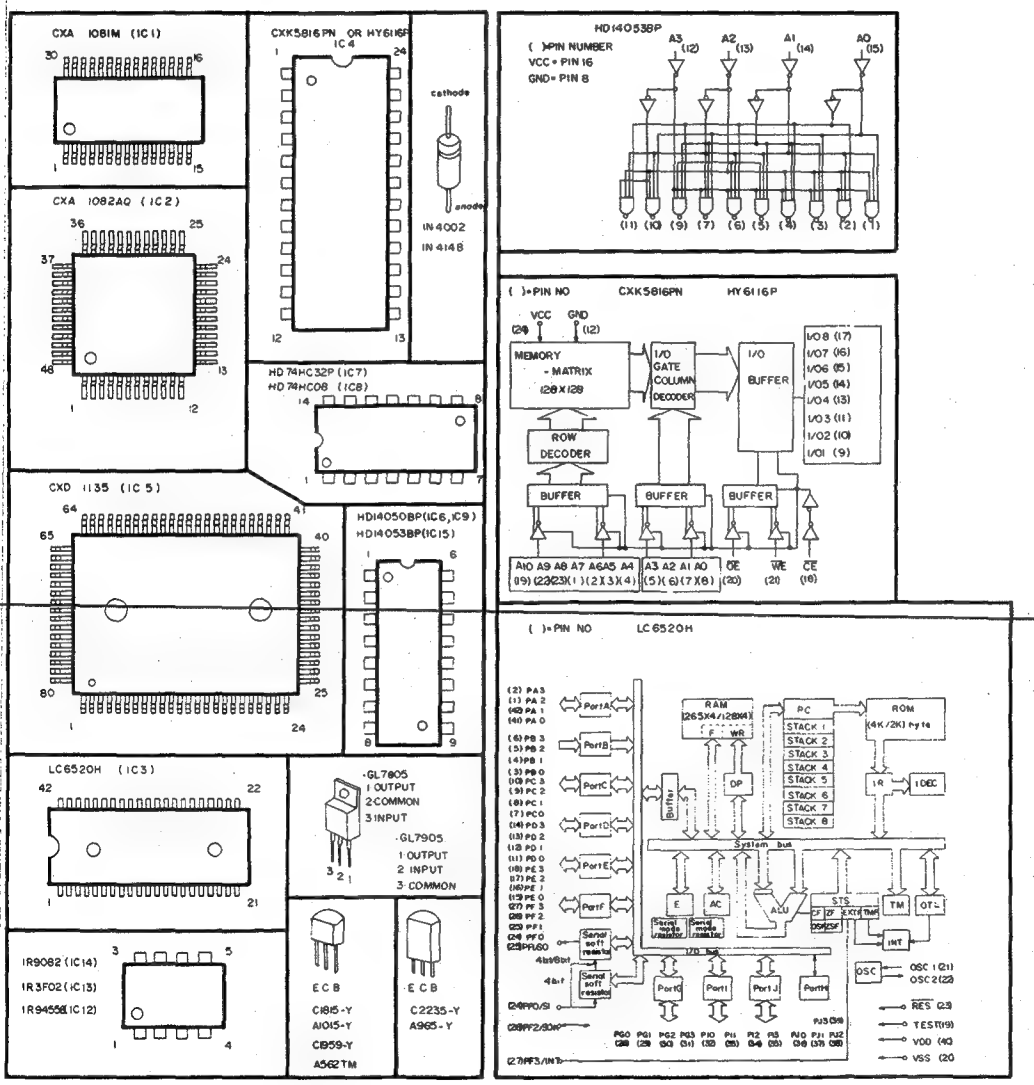
BLOCK DIAGRAM



NOTE:

1. Resistanse values are indicated in ohms unless otherwise specified (K = 1,000, M = 1,000,000)
2. Capacitance values are shown in microfarads unless otherwise noted (P = micro—microfarads)
3. Component values are Subject to change without notices
4. The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of Indentical designation.

SEMI CONDUCTOR PACKAGE



ELECTRICAL PARTS LIST

MAIN PCB

REF NO	RESISTORS	%
R101	CARBON 22 1/4W	5%
R102	CARBON 220 1/6W	5%
R201	CARBON 22K 1/6W	5%
R202	CARBON 22K 1/6W	5%
R203	CARBON 3.3K 1/6W	5%
R204	CARBON 10K 1/6W	5%
R205	CARBON 100K 1/6W	5%
R206	CARBON 10K 1/6W	5%
R207	CARBON 1K 1/6W	5%
R208	CARBON 1K 1/6W	5%
R301	CARBON 470K 1/6W	5%
R302	CARBON 10K 1/6W	5%
R303	CARBON 100K 1/6W	5%
R304	CARBON 100K 1/6W	5%
R305	CARBON 82K 1/6W	5%
R306	CARBON 82K 1/6W	5%
R307	CARBON 18K 1/6W	5%
R308	CARBON 6.8K 1/6W	5%
R309	CARBON 180K 1/6W	5%
R310	CARBON 560K 1/6W	5%
R311	CARBON 10K 1/6W	5%
R312	CARBON 100K 1/6W	5%
R313	CARBON 100K 1/6W	5%
R314	CARBON 120K 1/6W	5%
R315	CARBON 3.3K 1/6W	5%
R316	CARBON 100K 1/6W	5%
R317	CARBON 10K 1/6W	5%
R318	CARBON 1M 1/6W	5%
R319	CARBON 22K 1/6W	5%
R320	CARBON 10K 1/6W	5%
R401	CARBON 1K 1/6W	5%
R402	CARBON 5.6K 1/6W	5%
R403	CARBON 47K 1/6W	5%
R404	CARBON 82 1/6W	5%
R405	CARBON 82 1/6W	5%
R406	CARBON 82 1/6W	5%
R407	CARBON 82 1/6W	5%
R408	CARBON 82 1/6W	5%
R409	CARBON 82 1/6W	5%
R410	CARBON 82 1/6W	5%
R411	CARBON 82 1/6W	5%
R412	CARBON 82 1/6W	5%
R413	CARBON 4.7K 1/6W	5%
R414	CARBON 4.7K 1/6W	5%
R415	CARBON 4.7K 1/6W	5%
R416	CARBON 10K 1/6W	5%
R417	CARBON 82K 1/6W	5%
R418	CARBON 82K 1/6W	5%

REF NO	RESISTORS	%
R419	CARBON 150K 1/6W	5%
R420	CARBON 150K 1/6W	5%
R421	CARBON 3.3K 1/6W	5%
R601	CARBON 680 1/6W	5%
R602	CARBON 1K 1/6W	5%
R603	CARBON 22K 1/6W	5%
R604	CARBON 100K 1/6W	5%
R605	CARBON 10K 1/6W	5%
R606	CARBON 33K 1/6W	5%
R607	CARBON 27K 1/6W	5%
R608	CARBON 1K 1/6W	5%
R609	CARBON 12K 1/6W	5%
R610	CARBON 100K 1/6W	5%
R611	CARBON 100K 1/6W	5%
R612	CARBON 8.2K 1/6W	5%
R613	CARBON 8.2K 1/6W	5%
R614	CARBON 220K 1/6W	5%
R615	CARBON 220K 1/6W	5%
R616	CARBON 180 1/6W	5%
R617	CARBON 180 1/6W	5%
R618	CARBON 8.2K 1/6W	5%
R619	CARBON 8.2K 1/6W	5%
R620	CARBON 470 1/6W	5%
R621	CARBON 680 1/6W	5%
R622	CARBON 820 1/6W	5%
R623	CARBON 1K 1/6W	5%
R624	CARBON 100K 1/6W	5%
R625	CARBON 4.7K 1/6W	5%
R626	CARBON 470 1/6W	5%
R627	CARBON 680 1/6W	5%
R628	CARBON 820 1/6W	5%
R629	CARBON 100K 1/6W	5%
R630	CARBON 1K 1/6W	5%
R631	CARBON 4.7K 1/6W	5%
R632	CARBON 100K 1/6W	5%
R701	CARBON 1K 1/6W	5%
R702	CARBON 470 1/4W	5%
R703	CARBON 470 1/4W	5%
R704	CARBON 470 1/4W	5%
R705	CARBON 470 1/4W	5%
R706	CARBON 1K 1/6W	5%
R707	CARBON 1K 1/6W	5%
R708	CARBON 1K 1/6W	5%

	CAPACITORS	
C101	CERAMIC 100pF 50V	5%
C102	ELECTROLYTIC 100μF 10V	10%
C201	POLYESTER 0.01μF 50V	5%
C202	ELECTROLYTIC 0.47μF 50V	10%

REF NO	CAPACITORS	%
C203	POLYESTER 0.01μF 50V	5%
C204	POLYESTER 0.01μF 50V	5%
C205	POLYESTER 0.01μF 50V	5%
C206	POLYESTER 0.033μF 50V	5%
C301	POLYESTER 4700pF 50V	5%
C302	POLYESTER 0.047μF 50V	5%
C303	POLYESTER 0.047μF 50V	5%
C304	POLYESTER 0.1μF 50V	5%
C305	CERAMIC 2200pF 50V	10%
C306	POLYESTER 0.1μF 50V	5%
C307	CERAMIC 10pF 50V	5%
C308	ELECTROLYTIC 3.3μF 16V	10%
C309	CERAMIC 1000pF 50V	10%
C310	ELECTROLYTIC 2.2μF 50V	10%
C312	ELECTROLYTIC 22μF 10V	10%
C313	POLYESTER 0.015μF 50V	5%
C314	POLYESTER 0.01μF 50V	5%
C315	ELECTROLYTIC 22μF 10V	10%
C316	CEFAMIC 1000pF 50V	10%
C317	ELECTROLYTIC 10μF 16V	10%
C318	ELECTROLYTIC 1μF 50V	10%
C319	POLYESTER 4700pF 50V	5%
C320	ELECTROLYTIC 0.47μF 50V	10%
C321	POLYESTER 0.033μF 50V	5%
C322	CERAMIC 36pF 50V	5%
C323	CERAMIC 36pF 50V	5%
C401	ELECTROLYTIC 4.7μF 50V	10%
C402	ELECTROLYTIC 1μF 50V	10%
C403	CERAMIC 39pF 50V	5%
C404	CERAMIC 39pF 50V	5%
C405	CERAMIC 1500pF 50V	10%
C406	CERAMIC 1500pF 50V	10%
C601	ELECTROLYTIC 470μF 16V	10%
C602	ELECTROLYTIC 47μF 16V	10%
C603	ELECTROLYTIC 4.7μF 50V	10%
C604	ELECTROLYTIC 4.7μF 50V	10%
C605	ELECTROLYTIC 4.7μF 50V	10%
C606	POLYESTRENE 270pF 50V	2%
C607	POLYESTRENE 270pF 50V	2%
C608	POLYESTER 0.033μF 50V	5%
C609	POLYESTER 1500pF 50V	5%
C610	POLYESTER 1500pF 50V	5%
C611	POLYESTER 0.033μF 50V	5%
C612	POLYESTER 0.068μF 50V	5%
C613	POLYESTER 0.068μF 50V	5%
C614	ELECTROLYTIC 47μF 16V	10%
C615	ELECTROLYTIC 1μF 50V	10%
C616	POLYESTER 47μF 16V	5%
C617	POLYESTER 6800pF 50V	5%
C618	POLYESTER 6800pF 50V	5%
C701	ELECTROLYTIC 33μF 10V	10%
C702	ELECTROLYTIC 33μF 10V	10%
C703	ELECTROLYTIC 33μF 10V	10%
C704	ELECTROLYTIC 33μF 10V	10%

REF NO	CAPACITORS	%
C705	ELECTROLYTIC 100μF 10V	10%
C706	ELECTROLYTIC 100μF 10V	10%
C708	ELECTROLYTIC 100μF 10V	10%
C709	ELECTROLYTIC 100μF 10V	10%
C711	ELECTROLYTIC 100μF 10V	10%
C712	ELECTROLYTIC 100μF 10V	10%
C713	ELECTROLYTIC 100μF 10V	10%
C714	ELECTROLYTIC 100μF 16V	10%
C715	ELECTROLYTIC 100μF 16V	10%
C716	ELECTROLYTIC 100μF 16V	10%
C801	ELECTROLYTIC 470μF 10V	10%
C802	ELECTROLYTIC 470μF 10V	10%
C803	ELECTROLYTIC 2200μF 16V	10%
C804	ELECTROLYTIC 1000μF 16V	10%
C805	ELECTROLYTIC 330μF 25V	10%
C806	ELECTROLYTIC 470μF 25V	10%
C807	ELECTROLYTIC 220μF 16V	10%
C808	ELECTROLYTIC 220μF 16V	10%
C809	ELECTROLYTIC 47μF 16V	10%
C810	ELECTROLYTIC 100μF 25V	10%
C811	ELECTROLYTIC 100μF 25V	10%
C812	ELECTROLYTIC 47μF 16V	10%

	ICS	
IC1	CXA 1081M	
IC2	CXA 1082 AQ	
IC3	LC6520H	
IC4	CXK5816PN or HY6116	
IC5	CXD 1135Q	
IC6	HD 14050	
IC7	HD 74HC32	
IC8	HD 74HC08	
IC9	HD 14050	
IC10	GL 7805	
IC11	GL 7905	
IC12	IR 94558	
IC13	IR 3F02	
IC14	IR 9082	
IC15	HD 14053	

REF NO	DIODES	
D101	SWITCHING DIODE IN4148	
D401	SWITCHING DIODE IN4148	
D402	SWITCHING DIODE IN4148	
D403	SWITCHING DIODE IN4148	
D404	SWITCHING DIODE IN4148	
D405	SWITCHING DIODE IN4148	
D406	SWITCHING DIODE IN4148	
D407	SWITCHING DIODE IN4148	
D601	SWITCHING DIODE IN4148	
D602	SWITCHING DIODE IN4148	
D603	SWITCHING DIODE IN4148	
D701	RECTIFIER DIODE IN4002	
D702	RECTIFIER DIODE IN4002	
D704	RECTIFIER DIODE IN4002	
D705	RECTIFIER DIODE IN4002	
D706	RECTIFIER DIODE IN4002	
D707	RECTIFIER DIODE IN4002	
D708	RECTIFIER DIODE IN4002	
ZD701	ZENER DIODE 12.1V	
ZD702	ZENER DIODE 12.1V	
ZD703	ZENER DIODE 5.1V	
ZD704	ZENER DIODE 5.1V	

	TRANSISTORS	
Q101	KTA 1015-Y	
Q201	KTC 1815-Y	
Q301	KTC 1815-Y	
Q302	KTA 562 TM-Y	
Q303	KTC 1959-Y	
Q304	KTA 562 TM-Y	
Q305	KTC 1959-Y	
Q306	KTA 562 TM-Y	
Q307	KTC 1959-Y	
Q308	KTA 562 TM-Y	
Q309	KTC 1959-Y	
Q401	KTC 1815-Y	
Q402	KTC 1815-Y	
Q402	KTC 1815-Y	
Q403	KTC 1815-Y	
Q404	KTA 965-Y	
Q405	KTC 2235-Y	
Q601	KTA 1015-Y	
Q602	KTC 1815-Y	
Q603	KTC 1015-Y	
Q604	KTC 1815-Y	
Q605	KTC 1815-Y	
Q606	KTC 1815-Y	
Q607	KTC 1815-Y	
Q608	KTA 1015-Y	
Q609	KTC1815-Y	
Q701	KTA562TM-Y	
Q702	KTC1959-Y	

REF NO	INDUCTORS	
L101	LAL04KB100K 10μH	
L301	LAL04KB100K 10μH	
L401	LAL04KB100K 10μH	

	CRYSTALS	
X401	4.000MHz	
X601	8.4672MHz	

	VARIABLE RESISTORS	
VR101	2K	
VR201	20K	
VR202	50K	
VR203	20K	
VR204	50K	
VR301	2K	
VR601	500K	

	MISCELLANEOUS	
CN1	8p CONNECTOR	
CN2	4p CONNECTOR	
CN3	4P CONNECTOR	
CN4	4p CONNECTOR	
CN5	5p CONNECTOR	
CN6	9p CONNECTOR	
CN7	9p CONNECTOR	
CN8	6p CONNECTOR	
CN9	6p WRAPING PIN	
CN10	4p CONNECTOR	
CN11	4p CONNECTOR	
JW1	9p WIRE	
JW2	9p WIRE	
JW3	WIRE ASS'Y	
HS1	HEATSINK	
HS2	HEATSINK	
RCA1	RCA JACK	

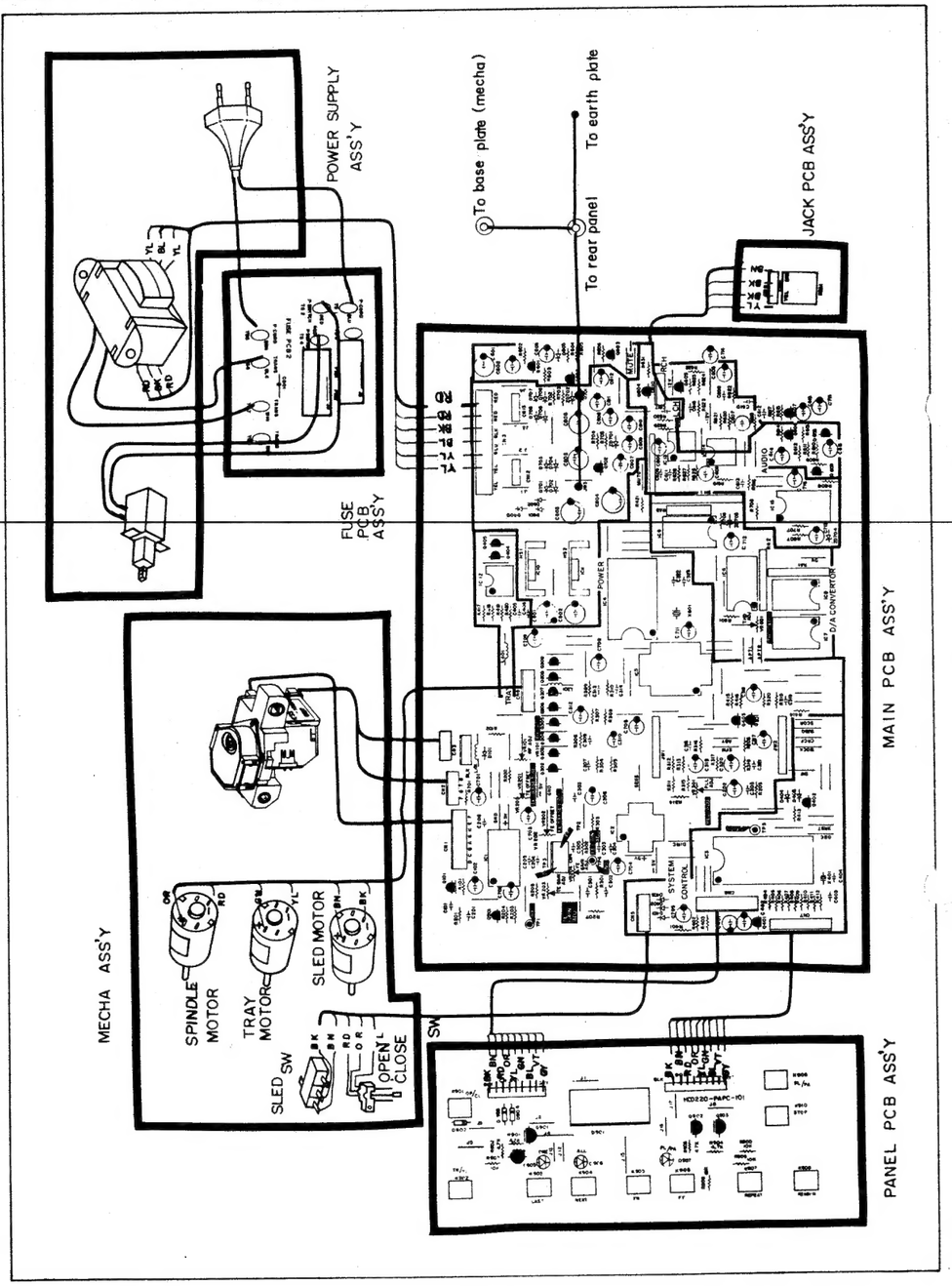
PANEL PCB

REF NO	TACT SWITCH	%
K901	OPEN/CLOSE KEY	
K902	TRACK/TIME KEY	
K903	LAST KEY	
K904	NEXT KEY	
K905	FR KEY	
K906	FF KEY	
K907	REPEAT KEY	
K908	REMAIN KEY	
K909	PLAY/PAUSE	
K910	STOP KEY	
	DIODES	
D901	DIGIT DISPLAY	
D902	IN4148	
D903	IN4148	
D904	IN4148	
D905	ONE INDICATOR (RED)	
D906	ALL INDICATOR (RED)	
D907	PLAY/PAUSE INDICATOR (GREEN)	
	RESISTORS	
R901	CARBON 4.7K 1/6W	5%
R902	CARBON 4.7K 1/6W	5%
R903	CARBON 4.7K 1/6W	5%
R904	CARBON 4.7K 1/6W	5%
R905	CARBON 10K 1/6W	5%
R906	CARBON 10K 1/6W	5%
R907	CARBON 10K 1/6W	5%
R908	CARBON 10K 1/6W	5%
HCD220 PAPC100	PANEL PCB ASS'Y	

FUSE PCB

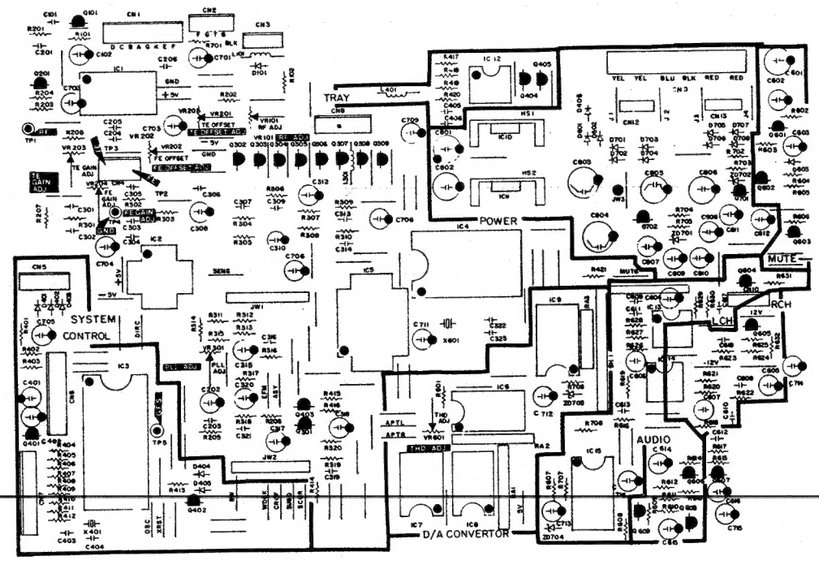
REF NO	FUSE PCB	
TS1	TAP STUD	
TS2	TAP STUD	
TS3	TAP STUD	
TS4	TAP STUD	
TS5	TAP STUD	
TS6	TAP STUD	
TS7	TAP STUD	
TS8	TAP STUD	
C901	LINE CROSS CAPACITOR 4700p 250V	
HCD220 FUPC100	FUSE PCB ASS'Y	

WIRING DIAGRAM

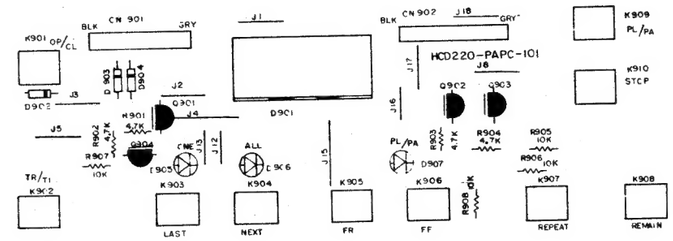


P.C BOARD

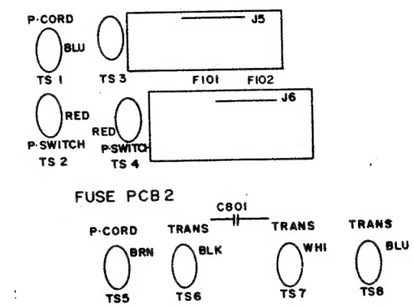
•MAIN PCB



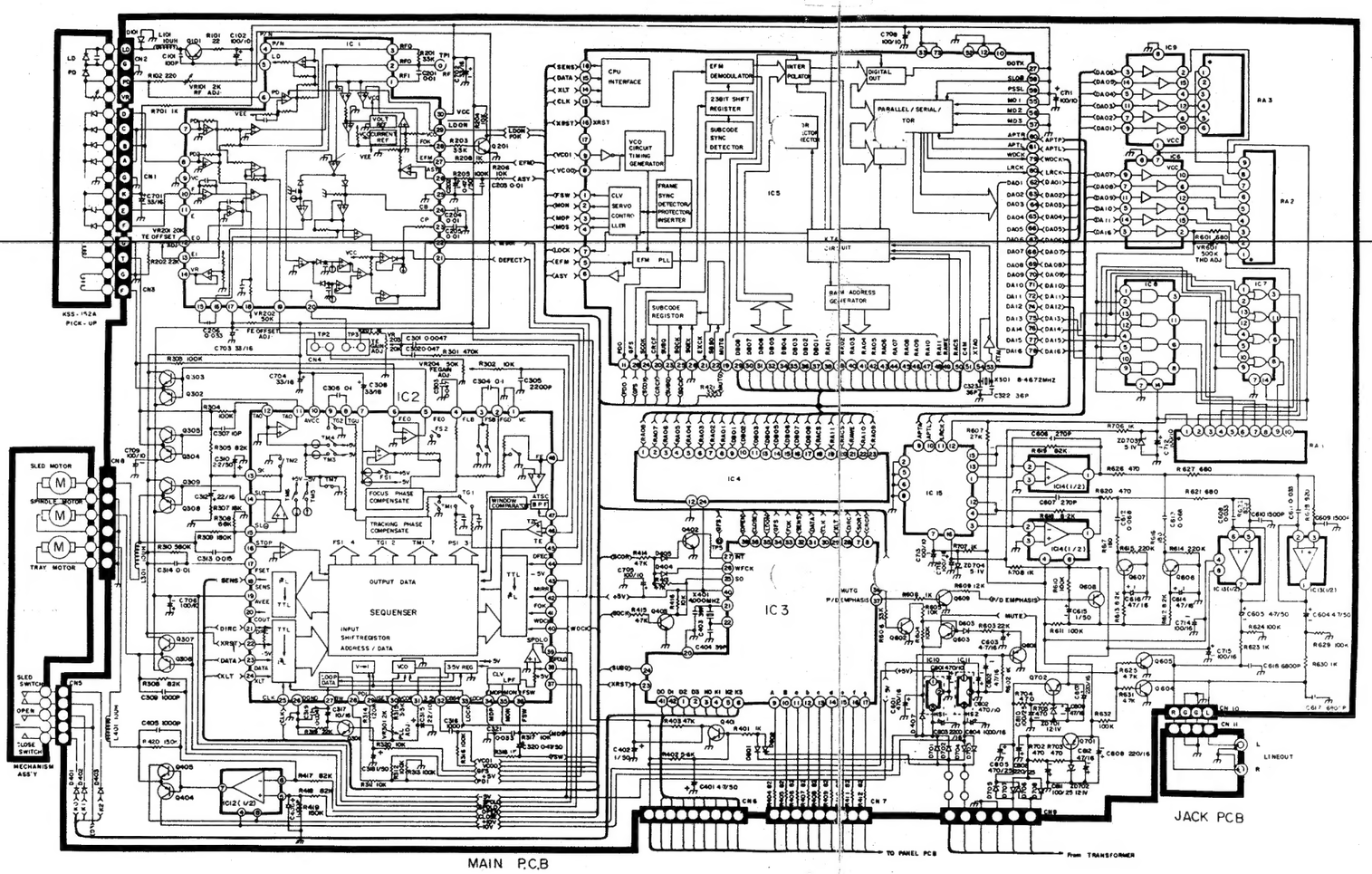
• PCB PANEL

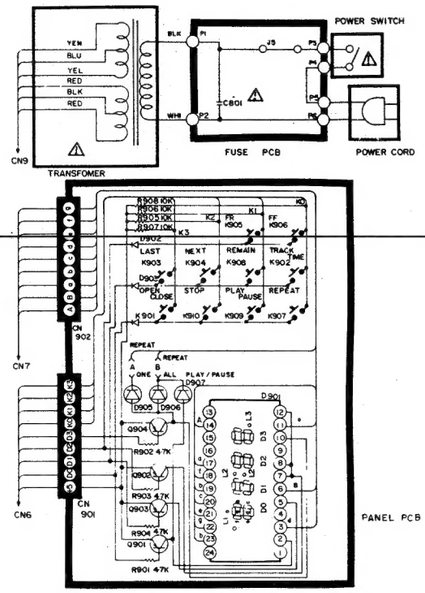


• FUSE PCB



SCHEMATIC DIAGRAM





Q101 Q801 Q603 Q606 Q303 Q304 Q308 Q308 Q701 Q404 Q201 Q301 Q401 Q402 Q403 Q602 Q604 Q605 Q606 Q607 Q609 Q303 Q305 Q307 Q309 Q702 Q405	: KTA1015-Y : KTA5621M-Y : KTA965-Y : KTC1815-Y : KTC1959-Y : KTC2235-Y
D701 - D708	: 1N4002
D101	
D401 - D407	: 1N4148
L101 L301 L401	: 10uH

1 4DIGIT DISPLAY(D901) PIN DATA

PIN NO.	ADDRESS	PIN NO.	ADDRESS	PIN NO.	ADDRESS	PIN NO.	ADDRESS
1	X	7	L2 ANODE	13	X	19	b CATHODE
2	DO ANODE	8	D2 ANODE	14	L3 CATHODE	20	c CATHODE
3	d CATHODE	9	X	15	X	21	e CATHODE
4	X	10	D3 ANODE	16	X	22	g CATHODE
5	D1 ANODE	11	e CATHODE	17	a CATHODE	23	L1 ANODE
6	L2 CATHODE	12	L3 ANODE	18	f CATHODE	24	L1 CATHODE